CLAIMS

1. (Currently Amended) A~~n iodine injection system for a~~ laser having an improved iodine injection system, the laser comprising:

a gas generator for producing a first gas;

a laser cavity where lasing occurs, the laser cavity in fluid communication with the gas generator;

a symmetric two-dimensional Minimum Length Nozzle (MLN) between the gas generator and the laser cavity, the MLN having:

~~a curved sonic line;~~

a throat located at a first end of the MLN, the throat being in fluid communication with the gas generator and receiving a flow of the first gas from the gas generator;

a curved sonic line defining the transonic boundary of the flow of the first gas within the MLN; and

an exit plane located at a second end of the MLN, the exit plane forming the boundary between the MLN and the laser cavity such that a flow of a second gas is output from the MLN and input into the laser cavity, and the flow of the second gas is generally uniform and generally supersonic; and

~~wherein the nozzle feeds a laser cavity; and~~

at least one ~~iodine~~ injection strut located within the MLN and ~~that is located~~ downstream of the throat, the strut injects iodine into the flow of the first gas.

2. (Currently Amended) The iodine injection system according to claim 1 wherein the first gas is ~~a stream comprising~~ oxygen which flows through the nozzle and flows perpendicular to an upstream edge of the strut ~~is perpendicular to the velocity of the stream~~.

3. (Original) The iodine injection system according to claim 2 wherein the upstream edge of the strut is a sharp wedge with an angle less than 45°.

4. (Original) The iodine injection system according to claim 3 wherein the sharp wedge has an angle of 20° or less.

5. (Original) The iodine injection system according to claim 1 wherein the strut has a coating on its outer surface.

6. (Original) The iodine injection system according to claim 1 wherein the nozzle has a kernel region and the strut is located near the downstream end of the kernel region.

7. (Original) The iodine injection system of claim 6 wherein the downstream edge of the kernel region is located between 10% to 50% of the distance from the throat and the exit plane.

8. (Cancelled).

9. (Previously Presented) The iodine injection system of claim 1 wherein the strut is located within 20% to 90% of the distance between the nozzle throat and the exit plane.

10. (Original) The iodine injection system according to claim 1 wherein the strut comprises an iodine feed duct and at least one orifice through which the iodine exits the feed duct.

11. (Original) The iodine injection system according to claim 10 wherein the feed duct has two ends and is manifolded for iodine feed from both ends.

12. (Cancelled)

13. (Cancelled)

14. (Previously Presented) The iodine injection system according to claim 11 wherein the feed duct includes a carrier gas.

15. (Original) The iodine injection system according to claim 1 wherein the nozzle has walls and the height of the strut between the nozzle walls is about 2 cm to about 50 cm.

16. (Original) The iodine injection system according to claim 1 wherein the width of a strut is about 2 mm to about 10 mm.

17. (Cancelled)

18. (Original) The iodine injection system according to claim 1 wherein there are at least two struts that are sufficiently spaced apart to reduce the amount of bow shock from one strut from impinging on an adjacent strut.

19. (Currently Amended) The iodine injection system according to claim 18 wherein the struts are spaced apart by about 0.5 cm to 4 cm.

20. (Original) The iodine injection system according to claim 1 wherein the strut has at least one fin on its downstream face.

21. (Cancelled)

22. (Original) The iodine injection system according to claim 3 wherein the sharp ogive has an angle of 20° or less.

23. (Previously Presented) The iodine injection system according to claim 1 wherein a carrier gas is injected with the iodine.

24. (Original) The iodine injection system according to claim 23 wherein the carrier gas is helium.

25. (Original) The iodine injection system according to claim 23 wherein the carrier gas is nitrogen.

26. (Original) The iodine injection system according to claim 1 wherein there are at least two struts, the second strut being located further downstream in the nozzle than the first.

27. (Original) The iodine injection system according to claim 1 wherein there are at least two struts that are staggered between the nozzle throat and the exit plane.

28. (Original) The iodine injection system according to claim 1 wherein the strut further comprises a heating element.

29-56. (Cancelled)

57. (New) A laser having an improved iodine injection system, the laser comprising:

a Singlet Delta Oxygen Generator (SOG) for producing a first flow of singlet delta oxygen;

a laser cavity where lasing occurs, the laser cavity in fluid communication with the SOG;

a symmetric two-dimensional MLN between the gas generator and the laser cavity, the MLN having:

a throat located at a first end of the MLN, the throat being in fluid communication with the gas generator and receiving the first flow from the SOG;

a curved sonic line defining the transonic boundary of the flow of the first flow; and

an exit plane located at a second end of the MLN, the exit plane forming the boundary between the MLN and the laser cavity such that a second flow of a second gas is output from the MLN and input into the laser cavity, and the flow of the second gas is generally uniform and generally supersonic; and

at least one injection member located within the MLN and located downstream of the curved sonic line, the injection member dispersing iodine into the first flow.

58. (New) The system according to claim 57, wherein the injection member comprises at least one strut.